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ABSTRACT

A study of the National Institute of Education's Research and Development Utilization (RDU) program illuminates several policy choices for federal and state support of dissemination and school improvement projects. RDU was established in 1976 to disseminate educational materials and thereby help schools clarify and solve local problems. Seven projects were supported by the RDU program for three years, serving altogether more than 300 schools. An independent research organization evaluated the RDU program to learn more about the management of local school improvement and the effectiveness of RDU strategies. Data sources included interviews of RDU project staff and linking agents, case studies of 40 participating sites, and mailed surveys of principals and teachers. The study revealed that a dissemination strategy can have benefits beyond the adoption and implementation on innovations, that relevant products of high quality (not necessarily locally developed) must be available for a dissemination-based approach to work, that external training and assistance must be consistently provided, and that high levels of faculty and administrator participation are crucial to successful adoption of innovations. Additional findings address funding, local self-sufficiency, educational equity, and the use of networks. An annotated bibliography of other RDU program reports is included. (Author/WD)

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Linking R&D with Schools

A Program and Its Implications for Dissemination and School Improvement Policy

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HIGHLIGHTS

Abt Associates has completed an assessment of NIE's Research and Development Utilization (RDU) Program. That program demonstrated a comprehensive model for linking results of educational research and development with local school improvement efforts in over 300 schools in 20 states between 1976 and 1979.

Major conclusions from the Abt Associates study are:

- A well-designed dissemination strategy which emphasizes the provision of high quality information, technical assistance, and small amounts of funds to local schools can be effective in promoting improvements in schools, in educational practice, and in benefits to students.

- Local commitment, resources, and energy continue to be essential and critical elements in improving schools.

- Local development or adaptation of innovative products is not as essential as previous research has indicated; both R&D-based products and validated practitioner-developed products can produce significant benefits in schools if: (a) they are carefully selected by practitioners to match their local conditions and needs, and (b) the schools can readily obtain the technical assistance and inservice training required to master the use of the new product.

- However, the array of existing R&D-based and validated products is not as extensive as expected and frequently is insufficient to match the full range of educational problems identified as priorities by local practitioners.

- The goal of building an ongoing capacity in schools to repeat complex problem-solving and improvement activities with high levels of faculty participation can be at least partially achieved while carrying out a specific local improvement activity. However, systematic development of such capacities requires more detailed attention than was provided within the RDU demonstration program.

- The similarly complex problem of increasing equity in education appears to be amenable to the RDU dissemination strategy, but focused attention is required in order to demonstrate dramatic improvements in this domain.

This document briefly describes the Research and Development Utilization Program, its assessment by Abt Associates, and major implications for dissemination and school improvement policies at federal, state, and local levels. An annotated list of other reports from the Abt Associates study is appended.

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Introduction

The objective of this report is to describe how the findings of the Study of the R&D Utilization (RDU) program illuminate policy choices for federal and state support of dissemination and school improvement programs. The findings that are discussed also have significance for decisions in local education agencies.

The terms "dissemination" and "school improvement" take on specific meanings in this report. Dissemination refers to activities that involve not only the spread of information by a central agency, but also a two-way process of matching the needs of a target population with a range of relevant resources and making these resources available to the population. School improvement refers to activities occurring at the school and school-district levels which result in increases in the effectiveness of teaching, curriculum, or other aspects of the school system's capacity to improve the quality of education for children. The R&D Utilization program, a demonstration effort funded by the National Institute of Education, was intended to support dissemination activities that would lead to school improvement at the local level.

The RDU Strategy: Where It Fits Into a Larger Policy Picture

There are several basic federal/state roles that support local school improvement efforts:

- Legislative/administrative mandate: This strategy involves developing laws and regulations governing minimum standards for staffing, programs, or even student achievement. When accompanied by effective sanctions, it has been viewed by some as the most efficient--although not necessarily most effective--means for producing massive local change.

- Resource support: The resource strategy provides positive incentives or assistance to districts that wish to engage in school improvement activities. Within the resource strategy there are three distinct types of support:

  -- fiscal strategies, which may take the form of "seed money" (temporary funding for improvement activities) or more permanent formula funding such as Title I;

  -- technological strategies, which support materials and program development, and make information about new practices available; and

  -- process/people strategies, which support free or very inexpensive technical assistance, training, consultation or other human resources.

The major federal approach used to support school improvement has been a combination of direct fiscal support through formula funding of

various types, combined with legislation and regulations that require many, if not most, districts to make changes in their curriculum, staffing, use of time, facilities, and other areas of school functioning, if they are to receive federal funds. The RDU strategy (described more fully below) looked quite different from this: it emphasized voluntary involvement, offered small amounts of seed money funding, and put a major emphasis on providing both technological and process/human support that would be responsive to locally defined needs.

The RDU program represents an example of recent efforts to foster school improvement by disseminating elements of the cumulative knowledge base on proven practices, processes and products that resulted from investments in research and program development. As such, it is one of several recent programs (e.g., The National Diffusion Network, Follow Through, State Capacity Building Grants Program, Regional Exchange and Regional Services) which have been designed to help improve school practice by attempting to bridge the gap between the producers and potential users of new knowledge and information on effective schooling. Many of these programs involved the creation and support of networks of organizations and individuals (including national organizations, state departments of education, regional organizations, intermediate service agencies, schools and school districts), each playing an essential role in the dissemination and knowledge utilization process. Dissemination has increasingly come to be viewed as an important and effective mechanism for promoting school improvement. Not only have specifically designed dissemination programs come into being, but other school improvement programs now have within their mandate "dissemination" functions as well.

Policy Issues

Policy makers and program managers face a number of issues in their consideration of support for school improvement through dissemination assistance, and in the design and management of dissemination programs. Among these are the following:

- How effective is a dissemination strategy in fostering school improvement? What are the impacts of a dissemination strategy? Are the products of educational R&D relevant to the problems and contexts of local schools? Can an external intervention help schools overcome barriers to successful problem solving? Are there other impacts that accrue from a dissemination strategy?

- What activities should be supported in a dissemination strategy? How useful is the support of the development of innovative products or practices? What kind of external services and internal processes should be encouraged?

- How much money needs to be given to local school sites directly? Is the provision of direct funds to sites necessary? What are the costs to local schools engaged in a school improvement process?

- What are the prospects for schools becoming relatively self-sufficient in solving local problems? What is the relative impact of external assistance and information, and internal processes and conditions?

- How effective can targeted dissemination programs be in addressing issues of educational equity? Who can benefit from dissemination assistance?

- How should networks supporting dissemination and knowledge use be designed? How simple or complex should a network be? Should it be based in a national, regional, state or other organizational level?

Many of these policy issues can be illuminated by the findings of the Study of the R&D Utilization program.

Overview of the RDU Program Objectives and Strategies

In June 1976, the National Institute of Education (NIE) established the Research and Development Utilization program (RDU) as a new demonstration effort to disseminate educational materials. The overall objective of the program was to help schools clarify and solve local problems. Three specific objectives guided the design of the program:

- to help schools alleviate specific, locally defined problems in the areas of basic skills and career education;

- to help school and district personnel learn about the products of educational research and development; and

- to increase understanding of how the local program improvement process could be better managed and become more effective.

The strategy for achieving these goals involved the funding of seven field-designed projects that would develop structures and procedures to:

- organize a linkage system, or network of national, state, and other external resources, including information and human resources which would be made available to school personnel;

- apply research-based products or ideas to school problems; and

- develop a problem-solving process, whereby schools would systematically identify problems, and select and implement new ideas.

In practice, the seven projects funded through the RDU program had a core operational definition of these general strategies. First, each project initially emphasized the use of field agents to assist local schools in using the network of external resources that was developed at the project level. Second, each project developed a knowledge base, or pool of products or practices, that were screened for quality, availability and transferability. Finally, each participating school or district was provided with assistance in following a sequence of problem-solving activities, which included:

- systematic needs assessment or problem identification;
- examination of alternative solutions to the problem, focusing particularly on the products of educational R&D;
- selection of a specific solution to address the problem;
- implementation of the solution; and
- evaluation and incorporation of both the solution and the problem-solving process.

The RDU program is unusual among federally funded dissemination strategies because of its dual commitment to the dissemination and use of R&D products and the development of local school capabilities to solve problems through the use of externally developed knowledge. Other federal programs have tended to concentrate on either dissemination of specific products or on building local capacity for planning and problem solving, but have not concentrated on an integrated model for combining the two.

Seven projects were supported by the RDU program for three years. Together, the seven projects served more than 300 schools. Projects were regionally distributed, and included the following:

- The Northwest Reading Consortium, involving the state departments of education and other agencies in Washington, Oregon, Alaska, and Idaho;
- The National Education Association Inservice Education Project, operated in collaboration with the departments of education and corresponding state education associations in 12 states: Alabama, California, Iowa, Massachusetts, Michigan, Minnesota, Ohio, Pennsylvania, Tennessee, Washington, Wisconsin, and Wyoming;
- The Consortium, operated by The NETWORK Inc., a non-profit research and service organization that coordinated the efforts of agencies in six states: California, Connecticut, Kansas, Massachusetts, Minnesota, and Washington;
- The Georgia Research and Development Utilization Program;

- The Pennsylvania School Improvement Program;
- The Florida Linkage System; and
- The Michigan Career Education Dissemination Project. This project was operated by the state department of education as were the projects in Georgia, Pennsylvania, and Florida.

Overview of the Study of the RDU Program

Abt Associates Inc., under contract to NIE, has conducted a three-year study of the RDU program. The major objective of the study has been to learn more about the management of the local school improvement process and the effectiveness of the RDU strategies. Data sources for the study included interviews with RDU project staff, interviews and surveys of linking agents, case studies of 40 participating sites, interviews conducted in visits to almost 50 additional local school sites participating in the program, and mailed surveys of principals and teachers.

Summary of Findings and Their Implications for Policy

Findings and implications are organized around the policy questions noted above.

HOW EFFECTIVE IS A DISSEMINATION STRATEGY IN FOSTERING SCHOOL IMPROVEMENT?

The dissemination strategies embodied in RDU resulted in a variety of school-improvement outcomes. School outcomes included the achievement of program goals (i.e., the successful completion of a problem-solving process, adoption and implementation of externally developed new school practices) and spinoff effects (i.e., organizational changes--such as changes in decision-making practices or the creation of new roles--and personal benefits to participating staff).

Even though participation in the program entailed a high level of effort on the part of local staff, approximately 75% of the participating local school sites remained in the program and successfully adopted and implemented new programs or practices. In these schools, 78% of the teachers surveyed indicated that they were currently using the product, and almost all of these reported they would continue use of the product in the future.

Teachers generally rated the quality of the new programs or practices they adopted very highly, and the new practices were rated as having significant impacts on the school. For example, 68% reported that the curriculum improved; 70% reported improved instructional materials; and 46% reported improved classroom management practices. Even at an early stage in product use, positive impacts on pupil attitudes, behavior and performance were reported by teachers: 60% reported great or some improvement as a result of the new program or practices.

Principals reported substantial efforts to ensure the schools' continued use of the new programs or practices. Most principals indicated

that the new programs or practices were formally incorporated into curriculum plans. A majority of principals also reported that they will look to R&D resources for programs and materials in the future as a means of solving local school problems.

In many schools, the problem-solving process was viewed as even more valuable than the new program or practice adopted. Teachers who actively participated on the local problem-solving teams more frequently reported personal growth in leadership skills, self-confidence and job satisfaction, and understanding of the school. Overall, the greatest personal benefits were reported by young, elementary school teachers, and by teachers using the adopted programs or practices. In the most successful schools, the process led to more major organizational changes.

The implication of these findings is that a dissemination strategy can indeed have far reaching school improvement impacts even beyond the adoption and implementation of externally developed innovative products. The power of the intervention to produce positive benefits for local schools was even greater for some of the unanticipated, long-range effects of the program, such as organizational changes and staff development outcomes, than for the actual immediate goals of the program. Overall, there is evidence to suggest that particularly in times of shrinking resources, dissemination activities can be a highly efficient strategy for achieving multiple objectives simultaneously. Bringing together faculty and administrators to meet a particular curriculum need, and drawing on information resources outside the school district can be a mechanism for resolving organizational problems and meeting staff development needs at the same time.

WHAT ACTIVITIES SHOULD BE SUPPORTED IN A DISSEMINATION STRATEGY?

All features of the RDU intervention were found to affect school outcomes positively. These program effects were as strong or stronger than site characteristics (such as previous experience with innovative programs).

The Importance of Support for Development of Innovative Products

Externally developed products or practices were found to be very relevant to the needs of participating schools. Most schools adopted and implemented new programs or practices from their projects' approved "product pool." Furthermore, the characteristics of the adopted program or practice had the strongest impacts of any features of the RDU intervention on the stated objective of ameliorating locally defined problems. Field-tested programs and those which were difficult to implement or which required extensive changes in the school, resulted in the highest reported levels of teacher satisfaction and impact on pupils. In addition, products that were of higher quality (in terms of the newness to the school of the approach that they embodied, their relevance to the local setting, and the adequacy of guidance for implementation) were far more likely to have an impact on all types of school outcomes, from product implementation to staff development. Contrary to the findings of the Rand Change Agent Study (Berman et al., 1975), products developed within the implementing school and those which required extensive local adaptation before implementation were less effective in producing these school outcomes.

Products initially developed in local schools and which currently had federal support for dissemination (e.g., those supported by programs such as the National Diffusion Network) were more frequently adopted than products developed through a more formal R&D process but generally lacking (federal) support for dissemination (e.g., those developed in laboratories or universities.) The lower rates of adoption of the more formally developed R&D products do not mean that such products are not useful to schools. Reasons for their low adoption include less easy access to materials or training for implementation. However, for all sources, whether practice- or research-based, there appears to be a scarcity of externally validated products in some significant areas that were emphasized by the RDU program (most notably, basic skills at the secondary level, and career education).

These findings have a number of significant policy implications. Based on the experience of the RDU program, where school personnel have an opportunity to consider and select alternative solutions to locally identified problems they are receptive to adopting and implementing externally developed and validated products and find them useful. Lack of prior widespread use of R&D-based products (or those developed by staff based in local districts) does not necessarily reflect a lack of relevance or potential utility. Rather, it reflects a lack of experience among schools in finding and using such products. However, if funding agencies wish to pursue active dissemination of validated products to serve local school needs, they must also engage in an active and rationalized product development strategy. Any effort to rapidly expand the dissemination of existing validated products will fail to meet many of the most pressing locally defined problems in schools because in many problem areas few products exist.

Another important consideration is the transportability of the products. The most frequently adopted products were chosen in part because they were better packaged, had more easily available materials, and often had more experienced trainers who were available to provide free or low-cost assistance both before and after implementation.

To summarize, high quality, locally selected products can have a great impact in the school improvement process, and the current belief that local materials development or adaptation is necessary in order to produce significant and lasting change in schools can thus be challenged. An R&D-based school-improvement strategy should emphasize curriculum development in areas that are responsive to school needs not currently met by existing products, should continue to concern itself with quality control screening, and should engage in active marketing to ensure that schools that would not normally come into contact with information about products will do so. Despite the dilemmas that arise when applying quality control procedures to the development of a knowledge base, these quality control procedures may be among the most important factors in determining dissemination program success.

The Usefulness of Support for External Human Assistance

The assistance of external field agents increased the impact of the program on the schools as a whole and on the predicted continued use of the new practices. Schools with intensive field agent involvement, and with agents who initiated as well as responded rated highest on school

outcomes. The involvement of a variety of other external consultants was even more important to school improvement, particularly in the area of training for implementation received from program developers and district specialists.

The powerful effect on school outcomes of external field agents and trainers suggests that such assistance should be included as a significant feature of dissemination programs. The major issue often raised by policy makers is that these functions should be viewed largely as an extension of specialist roles within districts, and should not, therefore, be paid for by external funding agencies. Even the more affluent local districts are increasingly strapped for resources to purchase such assistance outside the district, and are also suffering from reductions in existing field agent or technical assistance roles. It seems likely that in the absence of state or federal support, the type of human assistance needed to support locally initiated change will probably not be available.

Low levels of funding for external assistance, coupled with broad targeting of client groups, are unlikely to produce the effects found in the RDU program, however. While external field agents may be expected to work with between six and ten schools at a time, spreading external assistance too thinly may produce limited or no positive effects.

The Encouragement of Internal Problem-Solving Activities

Participation and influence of a broadly representative school-based problem-solving team with some decision-making authority were also significant in achieving program impacts on schools. Particularly important elements of the team activity were:

- an emphasis on building consensus and a feeling of program "ownership" through communication with teachers not on the team;
- a strongly committed team leader based in the school or district;
- adequate attention to planning for implementation; and
- strong but tactful intervention by the field agent who could connect the school with necessary resources.

A key factor in mobilizing resources for the school-level problem-solving process (and the greatest single category of expenditures to support change) was the availability of staff release time for teachers on the problem-solving team.

A number of conclusions that are directly relevant for federal dissemination policies may be drawn from the above. First, it is clear that the process is important in determining the organizational outcomes of a dissemination program. In particular, dissemination programs that do not encourage and support high levels of effort and broad involvement on the part of school staffs in engaging in a problem-solving process are less likely to

affect long-term organizational change. Since level of effort and broad involvement in the R&D Utilization program were significantly affected by the availability of some release time paid for with external funds by the projects, it appears that effective dissemination programs must supply such money to underwrite a part of the necessary labor.

Second, the degree to which the process approximated theoretical ideals of rationality and faculty participation is of importance in determining the degree to which observable change is effected. If the goal of a dissemination program is simply to implement a new activity or curriculum product in the short run, perhaps less attention needs to be given to the development of local problem-solving capacity. If, however, the goal is to improve the ongoing functioning of schools and the long-range quality of their curriculum, needs for assistance and training in problem solving at the school level cannot be ignored.

Combining Technological and People/Process Support

While each of the RDU strategies described above was found to affect school outcomes positively, it is the power of the strategies when they are combined that is most compelling. The RDU experience suggests that for a dissemination strategy to be effective in fostering school improvement, it is important that it support many related activities: (a) the development of innovative validated products in a wide variety of curriculum areas, well packaged, transportable and with potential training assistance; (b) reasonably intensive external human assistance to initiate and faciliate problem solving, and provide technical assistance and training; and (c) the encouraging of local participation in the problem-solving process to ensure local ownership, relevance to local needs, and a potential capacity building within districts to engage in ongoing problem-solving activities. This combination of external intervention and internal problem-solving activities significantly strengthens school improvement at the local level.

The data further suggest that the impacts of any one of the components of the RDU intervention discussed above cannot be interpreted except in the light of the potency of the other components of the intervention. Thus, for example, the finding that extensive local adaptation and local materials development did not promote school improvement resulted because the faculties that successfully implemented new practices went through a detailed problem-solving process. In this process they carefully clarified their real curriculum needs, were guided by external field agents through a process of matching these needs to the characteristics of selected potential innovative practices, and, having selected a solution, were able to transmit their enthusiasm to the whole faculty. Because the solution actually matched a felt need reasonably well, gross adaptations were typically not necesary. A "sense of ownership," which is often found to be related to incorporation of new practices, was developed through faculty involvement in the decision-making process, and not through participation in local materials development or classroom-level adaptation.

In summary, in order for a dissemination-based approach to school improvement to work effectively, it is necessary to have several minimal conditions occurring simultaneously. First, relevant products of high

quality must be available. Second, external training and technical assistance must be available on a relatively continuous basis. Third, the selection and implementation of a new practice must involve a locally driven process which is dominated by high levels of faculty involvement, strong support from administrators in the school and district, and must adhere at least minimally to principles of sound problem solving.

HOW MUCH MONEY NEEDS TO BE GIVEN TO LOCAL SITES?

In the RDU program, financial resources provided directly to local schools were very limited ($1,000-$8,000 per site). These funds were generally used for a variety of purposes in different sites: purchase of adopted products; compensation for substitutes to release teachers for RDU problem-solving activities; travel; etc. However, each dollar of federal funds generated additional resources at the school level worth about $5. These substantial "in-kind" contributions included uncompensated release time of participating teachers, district funds for materials and travel, and the use of local facilities and equipment. Personnel costs accounted for 85% of the total resources used by schools for participation in the RDU program. Most of these personnel costs represented the time spent by administrators and teachers in group brainstorming, materials development, research reporting, and program administration.

Although the dollars received by the sites were few, the limited provision of funds was an important stimulus to school activity. Since, as noted above, the release time necessary for the level of effort required by the activities was so important to the process, the availability of even limited funds was especially significant. Although the major emphasis of the RDU strategy was to provide technological (product) and process/human support, we can speculate that the small amounts of seed money were catalysts for the major commitment and in-kind investments of the local sites.

Several other federally sponsored programs have objectives that are roughly comparable to those of the RDU program (for example, Title IV-C of the 1978 Elementary and Secondary Education Act and the National Diffusion Network). While it is always difficult to make direct cost comparisons across programs using existing expenditure data, an attempt to do so between these three programs indicates that the RDU strategy is not necessarily any more costly to support on a per school basis than other currently funded federal school improvement programs.

WHAT ARE THE PROSPECTS FOR SCHOOLS BECOMING RELATIVELY SELF-SUFFICIENT IN SOLVING LOCAL PROBLEMS?

Many schools engaged in an extensive and participatory problem-solving process under the aegis of the RDU program and successfully achieved curriculum changes, organizational changes and staff development impacts. However, institutionalization of key features of the process (i.e., reliance on external resources, use of teams with high levels of effort, etc.) occurred less often. Schools did not generally acquire the internal capacity and commitment to repeat a problem-solving process as demanding as that used in the RDU program. Moreover, it appears that several factors that were highly predictive of other school outcomes had negative impacts on incorporation of the process. For example, the involvement of external field agents

tended to increase the degree to which knowledge was used and new programs implemented, but was negatively related to institutionalization of changes in the school's approach to problem solving. Thus, it appears to be extremely difficult to achieve increased local problem-solving capacity while simultaneously solving a variety of focused problems--although other desirable organizational changes and staff development impacts were spin-offs of this dissemination strategy.

There are several possible explanations for this lack of impact on the capacity of schools to continue the process. First, most of the service deliverers in the RDU program put less emphasis on local capacity building objectives. While the RDU program was not a "product pushing" effort, adoption and implementation of specific new programs was clearly a major focus and visible mark of accomplishment, both to the client schools and the RDU projects.

Second, the sites relied heavily on external assistance in engaging in the RDU problem-solving process and tended not to develop internally funded facilitators or staff developers who had the skills and resources to stimulate and support similar efforts. In part, this was because the objective of improved problem-solving capacity in client schools was a vague one for most of the RDU projects and was never fully explicated. Did the objective mean an increased awareness of the availability of external resources, a capacity to seek and acquire those resources including personal assistance when necessary, or did it mean the capacity to solve problems without external help?

Finally, local site conditions may be among the most critical factors militating for or against the building of internal capacity for participatory problem solving, and a commitment to such change must come from within. For example, schools that were most able to incorporate new problem-solving practices were those that exhibited previous similar experience, such as high levels of teacher influence over normal decision-making processes in the school, and some experience with similar types of problem-solving activities prior to becoming involved in RDU. Similarly, other site conditions detracted significantly from attempts to incorporate the process experiences of RDU into school or district practice. Frequently principal turnover undermined well established patterns of problem solving if the new incumbent was inexperienced with more rational models of problem solving. Unexpected financial cutbacks, or other disruptions, also contributed to discontinuation of new problem-solving practices that were highly rated by local educators, but not yet well established.

In general, on the basis of the RDU experience, this policy question must be answered negatively. The implication of this is that dissemination strategies may need sustained support, in one form or another, to facilitate problem solving and school improvement at the local level.

HOW EFFECTIVE ARE TARGETED DISSEMINATION PROGRAMS IN ADDRESSING ISSUES OF EDUCATIONAL EQUITY?

Local site characteristics can be important determinants of and/or impediments to the success of an external intervention. The selection of

sites to be included in the R&D Utilization program did not exhibit any bias toward sites with characteristics that might be thought to be predictive of strong interest in R&D products or in change. Many sites were rural and had only limited experience with R&D products prior to their involvement in this program. Only 12% of the schools were considered to be frequent users of new ideas or programs. In addition, the schools frequently were picked for inclusion in the program because they exhibited problems and not because they exhibited a high state of readiness for change.

In general, while site characteristics had an important impact on outcomes, the data provide less support to the notion of the importance of local school characteristics than do other studies. The power of the combined intervention strategies far outweighed the local site characteristics in predicting the school outcomes. There were no significant differences in outcomes based on school size, school level, rurality or community turbulence. On the other hand, schools with high proportions of low SES, low achieving and minority students were among the most successful in the program.

We feel this implies that the RDU intervention was particularly effective in equalizing the inequalities in innovativeness among schools that naturally occur as a result of differences in personnel resources or prior innovative experience. This also suggests that dissemination should be viewed as a significant means of addressing equity issues in schools.

HOW SHOULD NETWORKS SUPPORTING DISSEMINATION AND KNOWLEDGE USE BE DESIGNED?

The seven RDU projects each established a network of organizations that operated effectively in delivering services to schools. These networks involved long-term relationships between local schools, intermediate educational agencies (BOCES, county offices, etc.), state departments of education, universities, and independent educational organizations. Two were organized on a national basis, one on a regional basis, and four were state-based projects. In addition to physical dispersion, the project structures also varied in their level of complexity, underlying structure (consortia or hierarchical organization), prior collaborative relationship, and experience in related activities. A number of policy questions may be addressed on the basis of our study of these attempts to develop interorganizational networks:

What Are the Characteristics of Effective Networks?

Characteristics of networks that were most successful in delivering services that promoted successful outcomes at the local site levels were readiness, experience and expertise of the agencies involved in the service delivery network, the degree to which the program coincided with the organizational efforts of the project's host organization and received its support, the strength, commitment, and assertiveness of the project leadership, the sophistication of the design of the school intervention strategies, and the intensity and type of involvement of the field agents.

Characteristics of networks that surprisingly did not discriminate between more or less effective performance at the site level were the physical dispersion of the network (i.e., whether it was organized on a national, regional or state basis), its relative complexity and its underlying organizational structure. These factors did, however, affect the management dilemmas faced by the projects in their efforts to coordinate the projects' activities. In general, state-based projects and networks that did not bring together many dissimilar organizations tended to be easier to manage. Locating field agents or facilitators in intermediate service agencies proximate to the client schools tended to facilitate service delivery and responsiveness. However, this arrangement often caused problems in project management (which was usually centrally directed from the funded project host organization) and the roles and responsibilities of the intermediate organization were often unclear.

Can Networks Be Established Using a "Seed Money" Approach?

While effective in delivering services and information in the schools, in general the dissemination networks proved to be fragile, and tended to revert to previous practices at the end of the program. Institutionalization of new services or practices based on the RDU experience largely occurred within specific organizations in each network. In all of the projects, selected materials developed, or skills and learnings acquired, were incorporated into ongoing dissemination activities within the sponsoring agencies. Many acquired improved capacity for technical assistance and promoting knowledge transfer. Furthermore, many of the individual field agents were able to utilize their new skills in the further advancement of their careers. However, institutionalization of new interorganizational linkages occurred less frequently and only limited networking of components within some RDU projects continued beyond the funded period (and these were largely within the state-based projects).

Several factors contributed to the low level of maintenance of ongoing networking. First, the special status of the project as an externally funded contract and its definition as both a service delivery and research activity often resulted in its placement in an organizational unit that was not conducive to ultimate incorporation within the agency. This factor was sometimes aggravated by the choice of project director who was either not previously a member of the organization or not of central status within it and could not bridge the gap between the project and its host.

Second, tension between the quest for local control and ownership and the quest for centralized management was evident in all projects. In each case, the funded networks consisted of autonomous organizations that worked together under a centralized project management. While many organizations were willing to relinquish some autonomy and control for a temporary period, many also resisted the direction and control from above.

Third, the basis for a permanent collaboration between organizations of different types was often not considered in the press to begin delivering services under a limited, three-year contract. While few of the organizations entered with opportunistic motivations, there was often disagreement

about the objectives and emphasis of the joint activities, and the assumptions underlying the program were often not well understood. Some, for example, found the limitations of the demonstration to basic skills and career education and its emphasis upon validated R&D-based products to run counter to their philosophy of school assistance. In addition, goals and expectations for the roles to be played by various organizations participating in the network were rarely clear to all parties in the beginning and were often difficult to alter later because of the contractual structure of the program. Thus, the systems did not typically represent naturally occurring collaborative ventures, and were often perceived as too rigid to evolve.

Finally, the three-year time period of the funded demonstration was not sufficient to either solidify an interorganizational network that was built upon an interpersonal foundation, or to create the important interpersonal linkages upon which an interorganizational system can function. Many of the networks were originally constructed on the basis of prior interpersonal ties between organizational leaders. In several cases, these individuals did not continue to play an active role in the dissemination system that was created. Both interpersonal and interorganizational linkages appear, however, to be important to a successfully functioning network.

In summary, it is unrealistic to expect institutionalization of interorganizational networks if this is not an explicit and primary objective of a program. While many lasting benefits may occur in the organization involved, building permanent interorganizational service delivery systems requires commitments and resources beyond those normally available in a short-term demonstration.

How Can Federal or State Governments Most Effectively Encourage Networks for School Improvement?

The RDU experience suggests that there are several policy choices to be faced regarding the support of dissemination networks. If a governmental unit is willing to fund dissemination networks, and seeks to maximize the possibility that a network will be sustained, the following lessons may be extrapolated:

- Networks should be selected on the basis of the quality of their organizational design. Once the configuration is officially established through subcontracts and commitments to personnel, it is extremely difficult to alter it.

- Networks should be funded for longer periods than three years if they are to persist. Perfecting a design and overcoming the liabilities of "organizational newness" takes a great deal of time and energy. Without a longer period of trial, reversion will almost always occur.

- Funding agencies should be prepared to step in and provide further support if unavoidable problems in the sponsoring networks (such as massive economic problems, or major turnover) coincide with the

unstable period of transition from federal to local funding.

- The funding agency should, within the confines of the systematic constraints placed upon it, provide a high level of technical assistance to networks in obtaining self-correcting feedback.

- Funding agencies should not be misled by early indications of failure. Many startup and design problems can be corrected, and projects are generally not all of the same "age" despite the fact that they may have been funded at the same time.

- The desirability of improving management of networks, or of sustaining networks for long periods of time, should be weighed against the opportunity costs of funding temporary systems to achieve temporary ends. Given the mutability of the context, what appears to be an ideal system today may be a burden tomorrow.

- The government should not worry excessively about the question of organizational accountability. State and federal agencies will obtain some impact even in sub-optimal systems, and the costs of monitoring and improving these systems from the outside may be excessive. Rather, data from this study indicate that funding agencies should select carefully for features that would predict success, and minimize later interventions.

* * * *

The above summary of findings and policy implications from the Study of the RDU program are based on a number of technical reports. An annotated bibliography of all reports and papers prepared for the study may be found on the following pages.

Reference

Berman, P., P. Greenwood, M. McLaughlin, J. and Pincus, J. Federal Programs Supporting Educational Change, Vol. V.: Executive Summary. Santa Monica, CA, Rand Corporation, 1975.

ANNOTATED BIBLIOGRAPHY OF REPORTS
FROM THE STUDY OF LINKING R&D WITH SCHOOLS

Chabotar, K.J. and D.G. Kell. Linking R&D with Schools: An NIE Program and Its Policy Context. September, 1978. 18 pp.

The report presents a brief overview of the R&D Utilization program, and a more detailed presentation of the policy questions that the study of the program will address. The rankings that state and federal policy makers attach to the various policy questions that form the basis for the study are discussed.

Louis, K.S., J. Molitor, G. Spencer, and R. Yin. Linking R&D with Schools: An Interim Report. September, 1979. 39 pp.

The report presents a description of the R&D Utilization program, and the seven operating demonstration projects. Characteristics of the projects that are common to all, and those that are distinctive are identified. Preliminary observations about the nature of services being delivered to schools and the impacts of these on school improvement activities are discussed. Several vignettes of school activities in the program are presented.

Kell, D. and K.S. Louis (with S. Rosenblum and J.A. Molitor). The Role of Local Action Teams in School Improvement. June, 1980. 43 pp.

The report focuses on a major objective of the RDU program: to increase participatory decision making in schools. The aim of the report is to provide teachers and administrators with guidelines for establishing effective problem-solving teams. The conclusions of the report are illustrated by the experiences of three very different schools that were involved with the program.

Louis, K.S. "Linking R&D with Schools: Products and Processes: Some Preliminary Findings from the R&D Utilization Program and Their Implications for Federal Dissemination Policies." Paper presented at the 1980 meetings of the American Educational Research Association. 26 pp.

The paper presents a preliminary analysis of the survey data from 90 intensively studied schools. The paper concludes, on the basis of regression analyses, that all components of the planned RDU intervention strategy--the use of high quality "products," the application of technical assistance from external field agents and trainers, and the guidance of the school through a rational, participatory problem-solving process--have a strong impact upon knowledge utilization processes and outcomes. In addition, the report concludes that the effects of the variables measuring RDU strategies outweigh characteristics of the school such as readiness to engage in a change program.

Louis, K.S. "Linking R&D with Schools: Implications for School Administrators from the Study of the R&D Utilization Program." Paper prepared for the 1980 Summer Instructional Leadership Conference of the AASA. 11 pp.

Based on data from preliminary analyses of the impact of the RDU program at the school level, several recommendations for how school administrators may facilitate the problem-solving process in schools are drawn. These include the need to emphasize using externally developed products where they are available and appropriate, attempting to maximize a change effort by encouraging the adoption of complex new practices, and the importance of administrative support in the continuation and incorporation phase. Other recommendations include the importance of promoting teacher-driven, participatory change teams, and searching for external facilitators who can provide assistance and stimulation to a locally driven process.

Spencer, G.J. and K.S. Louis (with S. Rosenblum and G. Takata). Special Report on the Training and Support of Educational Linking Agents. September, 1980. 83 pp.

The objective of the report is to describe and assess the types of training and support that were provided to field agent personnel in the RDU program. This investigation is based on data provided by the RDU projects on the content, timing and methods of training activities for field agent personnel, and surveys of 49 field agents who were employed by the program for two or more years. In addition, "support," or informal communication, supervision and technical assistance to field agents are also analyzed, using the same data sources, and supplemented by interviews

with field agents' direct supervisors. The report concludes that (1) there were only minor differences in the formal training opportunities that each project provided to field agents; (2) field agents generally would have preferred more variety in content and training model; (3) both projects and and agent "host" organizations are important sources of support for agents; and (4) support activities have more impact on linker self-reported behavior than training.

Yin, R.K., M. Gwaltney, and K.S. Louis (with S. Rosenblum). Quality Control and Product Information Systems: An Interim Report on Implementation, Use and Effects in the R&D Utilization Program. October, 1980. 60 pp.

The report presents an analysis of the processes of developing and operating "knowledge bases" or pools of curriculum and inservice materials that were used by the seven RDU projects in providing services to their client schools. The major issues addressed include those of locating, acquiring and certifying materials, and the problems of matching locally defined school needs with the information that was available. The analysis indicates that despite considerable efforts on the part of NIE and the seven projects to emphasize the dissemination of validated R&D-based products, as many as 60% of the products adopted by the schools did not meet the criteria established in the program design. Some reasons for the discrepancies between intent and implementation are discussed.

Corwin, R.G. Program Design and Implementation: Biography of a Federal Program in its Funding Agency. November 3, 1980. 90 pp.

This reports analyzes the role of NIE as an agency in stimulating and supporting the development of the RDU program. The report emphasizes the interaction between the structure of the agency and the evolving events as they shaped major program decisions.

Chabotar, K.J., K.S. Louis, and S. Rosenblum, "The RDU Study and Its Policy Context: Perspectives of Educational Policy Makers." December 1, 1980. 26 pp.

This memorandum to NIE summarizes some of the preliminary findings from the RDU program, and the reactions to them of 14 major educational policy makers in the National Institute of Education and the Office of Education.

Louis, K.S., S. Rosenblum, and D. Kell. "Staff Development and Curriculum Change: What's Good for Teachers is Good for Schools." February, 1981. 9 pp.

This brief report is intended to communicate to teachers the findings of the study regarding the staff development benefits that occurred as a result of participating in the RDU process. The report concludes that teachers who participated on a team benefitted more than those who did not, that providing expert training in implementing a new curriculum produced more staff development benefits, and that focus on practical classroom problems was beneficial for teachers. The report concludes that merging inservice/staff development programs and planned change programs will create a more complimentary use of limited school funds.

Louis, K.S. "Policy Researcher as Sleuth: Integrating Qualitative and Quantitative Data." Paper presented at the 1981 meetings of the American Educational Research Association. 25 pp.

This paper presents an overview of the methodology of the study of the R&D Utilization program, and discusses the use of a "consolidated coding" approach to merging data collected by survey with that collected through semi-structured site visits. Some of the issues and problems associated with the methods are presented.

Chabotar, K.J., K.S. Louis and J. Sjogren. "Relationships Between Local Contributions and the Success of a Federal School Improvement Program." May, 1981. 6 pp.

This report presents very briefly the results of one component of a study of the costs of participating in RDU. The findings indicate that the total cost of the change effort (federally contributed plus locally contributed costs) is not related to the level of success of the change effort. The percentage of costs that represented locally contributed time and dollars was, however, positively correlated with success.

Louis, K.S. and D. Kell (with A. Young, G. Spencer, R. Carlson and B. Taylor) The Human Factor in Dissemination: Field Agent Roles in their Organizational Context. July, 1981. 190 pp.

This report presents an exploratory analysis of the field agent role based on surveys and interview materials from field agents in the RDU program. The report focuses on the role dilemmas of field agents, which include role conflict, role ambiguity, margin-

ality, and unclear specifications for behavior. Factors that affect both field agent job satisfaction and job performance, as measured by client satisfaction and agent assessments of school outcomes, are discussed. Three case studies that illuminate some of the problems of managing field agents, of developing appropriate role definitions with clients, and of choosing day-to-day tactics of role enactment are presented to enhance the quantitative survey findings. A preliminary model to explain agent job-related attitudes and role performance is derived from the analysis.

Louis, K.S., D. Kell, K. Chabotar, and S.D. Sieber (with P. Desmond) (eds.). Perspectives on School Improvement: A Casebook for Curriculum Change. July, 1981. 240 pp.

This report presents a framework within which administrators and curriculum coordinators can interpret various problems in managing change. Chapter-length case studies of schools that participated in the RDU program are presented to illuminate change management issues in three areas: leadership and participation; strategies and tactics of initiating and implementing new programs; and managing contingencies that arise in the change process. Each chapter is accompanied by questions that are suitable for group discussion of the case, and a chapter synthesizing across all 12 cases is presented. The report is intended for use either as a text or as a book of readings for school professionals.

Louis, K.S. and S. Rosenblum (with G. Spencer, J. Stookey and R. Yin). Designing and Managing Interorganizational Networks. July, 1981. 180 pp.

The report examines the assumptions underlying the emphasis of the RDU program on the development of interorganizational networks to support the delivery of information and technical assistance to schools. A model for examining network design, network management, and the outcomes of networking is presented and illustrated through the presentation of four chapter-length cases of RDU programs. The final chapter derives conclusions and recommendations regarding design and management of interorganizational relationships.

Louis, K.S., A. Rosenblum, and J. Molitor (with K. Chabotar, D. Kell and R. Yin). Strategies for Knowledge Use and School Improvement. July, 1981. 260 pp.

The report examines the process of change at the school level, using a framework that draws upon current organizational theory, and assumptions about knowledge utilization

and school improvement. The report draws most heavily on quantitative data sources to illuminate the relationship between the intervention strategies used by the RDU projects, and school processes and outcomes; it also uses qualitative case material to expand upon the findings. The final chapter presents some reflections drawn from observations of the participating schools about the ways in which knowledge utilization and general school improvement can be facilitated.

Louis, K.S., Rosenblum, S. and Molitor, J. Strategies for Knowledge Use and School Improvement: A Summary. July, 1981. 50 pp.

This report combines two papers presented at the American Educational Research Association meetings in 1981. The first paper presents an overview of the outcomes of the RDU program at the school level, while the second presents an analysis of the way in which product characteristics, technical assistance, the internal problem-solving process, and school and pupil characteristics predict the level of success of the program. (This report is a summary of Volume 2 of the Final Report.)

Louis, K.S. and Rosenblum, S. Linking R&D with Local Schools: A Summary of Implications for Dissemination and School Improvement Programs. July, 1981. 21 pp.

This report serves as an executive summary for the project, and synthesizes the main findings of both volumes of the final report in the context of some of the major policy and management decisions that currently face dissemination programs at the federal and state level.